

## **REMARKS**

Applicant offers the above amendments and the below remarks in support of the patentability of the pending claims. Applicant has amended independent claims 1, 29, and 36-38 to include the recitation of dependent claim 5; claim 5 has accordingly been canceled. Applicant now respectfully requests this application be passed to allowance.

### **Rejections Under 35 U.S.C. § 103(a)**

#### **A. Claims 1-4, 6, 13-18, 27, and 37 are Not Obvious over *Slepetys***

The Office rejected claims 1-4, 6, 13-18, 27, and 37 as allegedly obvious over U.S. Patent No. 5,393,340 ("*Slepetys*"). For at least the following reasons, Applicant respectfully traverses those rejections.

##### **1. Independent Claim 1 and Dependent Claim 6**

With respect to claims 1 and 6, the Office alleges that *Slepetys* teaches "a calcined kaolin pigment in which 80-98% by weight of it has a particle size of less than 2 micron, and its solid content is from 20% to 70% by weight." Office Action at 2. The Office postulated that there is an overlapping range between the particle size distribution of the present claims and the distribution disclosed in *Slepetys*, which allegedly renders the claims *prima facie* obvious. *Id.*

To assist in establishing a *prima facie* case of obviousness, the Office must demonstrate that the claimed ranges overlap or lie inside ranges disclosed by the prior art. See MPEP § 2144.05. Applicant submits that independent claim 1 as amended is not *prima facie* obvious at least because there is no overlap between the particle size distributions recited in the instant claim and the ones taught in *Slepetys*.

*Slepetys* discloses a calcined kaolin product in which 60-85% (preferably 64-82%) of particles by weight have a particle size of less than 1 micron, and in which 80-98% (preferably 88-98%) of the particles by weight have a particle size of less than 2 microns. See col. 3, lines 9-10. In contrast to *Slepetys*, independent claim 1 is directed to a composition wherein at least about 40% by weight of the calcined kaolin has a particle size of at least about 1  $\mu\text{m}$ , and at least about 40% by weight of the calcined kaolin has a particle size of at least about 2  $\mu\text{m}$ . Applicant respectfully points out that the *Slepetys* range where 60-85% of particles are less than 1 micron does not

necessarily overlap with the presently recited distribution, wherein at least 40% of the particles have a size of at least (i.e., greater than) about 1 micron. Applicant also points out that the *Slepetys* range where 80-98% of the particles are less than 2 microns does not at all overlap with the presently recited distribution, as amended, wherein at least 40% of the particles have a size of at least about 2 microns. In fact, the 2 micron ranges of *Slepetys* and the pending claims are entirely mutually exclusive.

The recited particle size ranges of the pending claims indicate a fundamental difference between the teachings of the present application and the disclosure of *Slepetys*. *Slepetys* concerns a “fine calcined pigment product” (col. 3, lines 14-15) while the presently claimed inventions are generally directed to “coarse calcined kaolin slurries” (abstract). The recited particle size ranges, as amended, emphasize the difference in coarse versus fine kaolins—or, stated, differently, the difference between the pending claims and the disclosure in *Slepetys*. That basic distinction also highlights why the skilled artisan would not have been motivated, and would not have found it desirable, to modify the teachings of *Slepetys* in an effort to achieve the subject matter of the pending claims.

*Slepetys* and the presently claimed subject matter are directed to forms of kaolin with fundamentally different particle size distributions. The pending claims, as amended, reveal and highlight that distinction. For at least those reasons, Applicant respectfully submits that the rejected claims would not have been obvious to the skilled artisan over *Slepetys*, such that this objection be withdrawn.

## **2. Claims 2-4, 6, 13-18, 27, and 37**

The Office also alleges that claims 2-4, 6, 13-18, 27, and 37 are obvious over *Slepetys*. Dependent claims 2-4, 6, 13-18, and 27, as well as independent claim 37, recite *inter alia* the particle size limitations of claim 1—at least about 40% by weight of the calcined kaolin has a particle size of at least about 1  $\mu\text{m}$ , and at least about 40% by weight of the calcined kaolin has a particle size of at least about 2  $\mu\text{m}$ . Therefore, for the same reasons discussed above for claims 1 and 6, these claims are also not *prima facie* obvious over *Slepetys*. Applicant respectfully requests the objection be withdrawn.

**B. Rejection of Claims 1-3, 5-6, 26, 29-30, and 35-36 over *Chen***

The Office rejected claims 1-3, 5-6, 26, 29-30, and 35-36, alleging that the claims are obvious over U.S. Patent No. 6,150,289 ("*Chen*"). With respect to claims 1-3 and 5-6, the Office argued that *Chen* teaches "aqueous slurry of calcined kaolin clay used in coating compositions which contain about 30% to 70% by weight of solids" and that the reference also teaches that "about 98% by weight of the calcined kaolin has an equivalent spherical diameter (esd) of less than 5  $\mu\text{m}$ ." Office Action at 4-5. As with *Slepetys*, the Office asserted that *Chen* "teaches overlapping ranges with the present claims," arguing that the claims are thus *prima facie* obvious. *Id.* The Office further argued that claims 29 and 36 are obvious over *Chen*, as it allegedly teaches "treating calcined kaolin clay to obtain a particle size distribution such that about 98% by weight of the particles have an esd less than 5  $\mu\text{m}$ ." *Id.* at 5. The Office also rejected claim 30, arguing that *Chen* discloses "that in a preferred embodiment of the disclosed invention, a cationic polymer is used as a dispersant in the aqueous slurry containing calcined kaolin clay." *Id.* at 6. Finally, the Office asserted that *Chen* allegedly renders claims 26 and 35 obvious, because it discloses that "through the process, which results in the desired clay particle size, a dry grinding process in a conventional ball mill is done as well," and noted that "this grinding process is not considered a mechanical grinding process by applicants' definition." *Id.* Applicant respectfully traverses.

Once again, the rejected claims recite, *inter alia*, a particle size distribution wherein at least about 40% by weight of the calcined kaolin has a particle size of at least about 1  $\mu\text{m}$ , and at least about 40% by weight of the calcined kaolin has a particle size of at least about 2  $\mu\text{m}$ . As pointed out by the Office, *Chen* appears to disclose kaolin with about 98% by weight having an esd of less than 5  $\mu\text{m}$ . However, in describing the same kaolin, *Chen* further appears to disclose that about 80% of its particles by weight have an esd of less than 1  $\mu\text{m}$ . See col. 6, lines 10-12. Therefore, the skilled artisan would presumably understand that only about 20% of the *Chen* kaolin particles have an esd of at least 1  $\mu\text{m}$ . Clearly, similar to *Slepetys*, *Chen*'s particle size distribution does not overlap with the ranges recited in the pending claims. For at least that reason, claims 1-3, 5-6, 26, 29-30, and 35-36 are not *prima facie* obvious over *Chen* and Applicant respectfully requests that the objections be withdrawn.

### **C. Further § 103(a) Rejections**

The Office rejected claims 7-22 and 38 as obvious over *Slepetys* in view of U.S. Application Pub. No. 2003/0177952 ("*Cummings*"). The Office also rejected claims 7-12 as allegedly obvious over *Slepetys* in view of U.S. Patent No. 5,028,268 ("*Ince*"). Further, claims 23-26 were rejected as obvious over *Slepetys* in view of U.S. Application Pub. No. 2003/0141224 ("*Pruett*"). The Office additionally presented an obviousness rejection of claim 19, arguing that it is obvious over *Slepetys* in view of U.S. Patent No. 5,282,898 ("*Wu*"). The Office further rejected claim 34 as allegedly obvious over *Chen* in view of *Slepetys*. Claim 28 was rejected as obvious over *Slepetys* in view of U.S. Patent No. 3,309,214 to *Joseph et al.* ("*Joseph*"). In addition, the Office rejected claims 30-32, asserting that they are obvious over *Chen* in view of *Cummings*. Finally, claim 33 was rejected as allegedly obvious over *Chen* in view of *Pruett*. Applicant respectfully traverses each of the Office's rejections.

The Office has failed to establish *prima facie* cases of obviousness at least because neither of the primary references—*Slepetys* or *Chen*—teaches or suggests at least the particle size distribution of the pending claims, as amended and discussed above. And none of the secondary references—*Cummings*, *Ince*, *Pruett*, *Wu*, or *Joseph*—remedy that deficiency. Therefore, even if the skilled artisan would have been motivated or would have found it desirable to combine the cited references as suggested by the Office, that result still would not have achieved the subject matter of the pending claims. And the Office has not shown that the skilled artisan would have been motivated to further modify that combination of references to achieve at least the claimed particle size distributions, at least not with any reasonable expectation of success. Therefore, the Office has not established a proper *prima facie* case of obviousness and Applicant respectfully requests that the rejections be withdrawn.

### **Conclusion**

Applicant submits that the Office cannot establish a proper *prima facie* case of obviousness with respect to the pending claims, as amended. In particular, none of the references cited by the Office teach or suggest kaolins with the recited particle size

distributions. Therefore, Applicant respectfully requests that all rejections be withdrawn and that this application be passed to allowance.

If the Office has any questions regarding this Response or the application in general, Applicant respectfully requests that the Office contact the undersigned representative at the information listed below.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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